

Working Draft

List of Flow Parameters to Support CS Options Evaluation

In order to conduct a qualitative comparative evaluation of the four CS Options approved for review by the Steering Committee, example flow conditions under each option need to be identified. The table below is provided as guidance on flow parameters (i.e., the “operational knobs”) that would be useful in evaluating the relative affects on fish of the CS Options. The metric for the flow value (third column) and the time unit needed (fourth column) for each flow variable is identified in the table.

The purpose of the CS Options Evaluation is to provide the Steering Committee with information to help select a structural configuration option to carry forward to the Framework Document. Information on flow is only needed to provide a basis for comparing how the structural options perform relative to each other. The choice of flow parameter values (where to set the operational “knobs”) for this evaluation are only intended to provide a comparison of a range of flow effects on fish that would be associated with each of the CS Options’ structural configurations. Selected flow parameter variables need not be optimal for fish or supply, but rather will serve the purpose of allowing for comparison of the four structural CS Options against the evaluation criteria (biological, planning, flexibility-durability-sustainability, other resource impacts).

1. Flow Parameter	2. Biological Basis	3. Metric for Flow Parameter Value	4. Time Unit for Flow Value
Sacramento River inflow at Rio Vista	Downstream transport of fish eggs and larvae, juvenile salmonid survival, adult salmonid attraction	Flow rate (cfs) at Rio Vista	Monthly year-round
Delta Cross Channel operations	Juvenile salmonid survival, distribution of delta smelt, delta hydrodynamics	Gate closure or opening	Monthly – year-round
San Joaquin River flow (<i>SAIC would identify this flow value based on SJR programs</i>)	Downstream transport of fish eggs and larvae, juvenile salmonid survival, adult salmonid attraction, improvement in DO in Stockton Deep Water Ship Channel during spring and fall	Flow rate (cfs) at Vernalis	Monthly year-round

1. Flow Parameter	2. Biological Basis	3. Metric for Flow Parameter Value	4. Time Unit for Flow Value
Head of Old River Barrier operation	Juvenile salmonid survival, distribution of delta smelt and vulnerability to entrainment/salvage, delta hydrodynamics	Barrier closure	Monthly year-round
Old River flow	Vulnerability of juvenile salmonids and delta smelt to salvage, delta hydrodynamics, hydraulic residence time	Flow rate and net direction (cfs)	Monthly year-round
Middle River flow	Vulnerability of juvenile salmonids and delta smelt to salvage, delta hydrodynamics, hydraulic residence time	Flow rate and net direction (cfs)	Monthly year-round
X2 location	Downstream dispersal and geographic distribution of fish eggs, larvae, and juveniles, location and quantity of low-salinity habitat, delta hydrodynamics	Km from Golden Gate Bridge	Monthly – year-round
Delta outflow	Downstream dispersal and geographic distribution of fish eggs, larvae, and juveniles as well as macroinvertebrates, location and quantity of low-salinity habitat, delta hydrodynamics, juvenile salmonid survival, freshwater contribution to San Francisco Bay estuarine conditions	Flow rate (cfs)	Monthly year-round
E:I Ratio	Delta hydrodynamics	E:I ratio	Monthly year-round
Operations of all new barriers under Options 2 & 3	Distribution of delta smelt, delta hydrodynamics	Barrier opening or closure	Monthly year-round